

WHAT IS CLAIMED IS:

1. An apparatus for influencing the travel properties of a material moving between a material supply source and a delivery location, the apparatus comprising:

5 means forming a feed path along which material travels as the material is enroute from the material supply source to the delivery location, the feed path passing through an upstream passage bounded by an upstream passage periphery each point of which is at a predetermined radial spacing from a reference axis and the feed path including one branch
10 having a branch entry downstream of the upstream passage and another branch having a branch entry downstream of the upstream passage, the stream of material traveling through the upstream passage thereafter separating into at least two portions with one portion of the material entering the one branch through its branch entry and thereafter traveling
15 along the one branch and another portion of the material entering the another branch through its branch entry and thereafter traveling along the another branch in a manner in which the another portion of the material and the one portion of the material are segregated from one another during their respective travel along the one branch and the another branch; and

20 means for moving at least one of the upstream passage periphery and the one branch entry relative to the reference axis such that the one portion of the material and the another portion of the material, prior to their respective segregated travel along the one branch and the another branch, are comprised in unseparated manner in the stream of material as it
25 travels through the upstream passage and the portions of the material thereafter travel in segregated manner in their respective branches with the travel properties of the one portion of the material in the one branch being different than its travel properties before the movement of the at least one

of the upstream passage periphery and the one branch entry relative to the reference axis.

2. An apparatus for influencing the travel properties of a material according to claim 1 wherein a superimposition of the upstream passage periphery on the one branch entry effected by axially translating the upstream passage periphery along the reference axis onto the one branch entry delimits a predetermined cross sectional superimposed area of the one branch entry and the means for moving at least one of the upstream passage periphery and the one branch entry relative to the reference axis includes means for changing the radial position of the upstream passage periphery relative to the reference axis to effect a change in the superimposed cross sectional area of the one branch entry delimited by the superimposition of the upstream passage periphery on the one branch entry, the means for changing the radial position of the upstream passage periphery being operable to change the radial position of the upstream passage periphery from an initial upstream position during an initial material feed period to a subsequent upstream position during a subsequent material feed period following the initial material feed period, whereby the superimposition of the upstream passage periphery on the one branch entry delimits, during the initial material feed period, an initial superimposed cross sectional area of the one branch entry and delimits, during the subsequent material feed period, a subsequent superimposed cross sectional area of the one branch entry which differs from the initial cross sectional area.

3. An apparatus for influencing the travel properties of a material according to claim 1 wherein the subsequent superimposed cross sectional area of the one branch entry which is delimited by the superimposition of the upstream passage periphery on the one branch entry is smaller than the initial superimposed cross sectional area of the one branch entry.

4. An apparatus for influencing the travel properties of a material according to claim 1 wherein the subsequent superimposed cross sectional area of

the one branch entry which is delimited by the superimposition of the upstream passage periphery on the one branch entry is larger than the initial superimposed cross sectional area of the one branch entry.

5. An apparatus for influencing the travel properties of a material
5 according to claim 1 wherein the subsequent superimposed cross sectional area of the one branch entry which is delimited by the superimposition of the upstream passage periphery on the one branch entry is at a different radial position than the initial superimposed cross sectional area of the one branch entry.

6. An apparatus for influencing the travel properties of a material
10 according to claim 1 wherein the means for relatively moving includes means for axially moving the upstream passage periphery relatively toward and away from the two branch entries.

7. An apparatus for influencing the travel properties of a material
according to claim 5 and further comprising means for sensing a predetermined
15 mass flow rate in the one branch and means operatively coupled to the predetermined mass flow rate sensing means and means for axially moving the upstream passage periphery for controlling the axial movement of the upstream passage periphery in response to the sensing of the predetermined mass flow rate by the predetermined mass flow rate sensing means.